

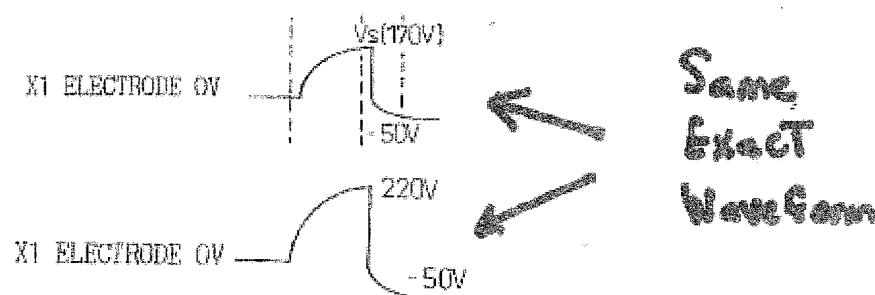
REMARKS

Claims 1-3, 5-7, and 32-37 are pending. Claim 6 has been amended and new claims 33-37 have been added to recite additional features of the embodiments disclosed in the specification.

In the Office Action, claims 1, 2, 5-7, and 32 were rejected under 35 USC § 103(a) for being obvious in view of a Kanazawa-AAPA combination. Applicants request the Examiner to withdraw this rejection for the following reasons.

Claim 1 recites that different (first and second) waveforms are applied to a sustain electrode during different (first and second) time intervals of a set-up interval in different (initial and subsequent) sub-fields of a frame of data. Claim 1 further recites that “the second waveform applied to the sustain electrode has a predetermined non-zero slope different from a non-zero slope of the first electrically floated waveform.” The Kanazawa patent does not teach or suggest these features.

In rejecting claim 1, the Examiner relied on the waveforms applied in the reset periods of Figures 16 and 18 of the Kanazawa patent. The waveform applied in the reset period of the top subfield is shown during the write period in Figure 18, and the waveform applied in the reset period of one or more subsequent subfields is shown during the write period in Figure 16. These waveforms are reproduced below.



However, as shown above, the waveform of Figure 16 does not have a “predetermined non-zero slope different from a non-zero slope” of the waveform of Figure 18. Rather, both waveforms are exactly the same in terms of their slopes. The only difference is the starting voltage of those waveforms. More specifically, both waveforms begin with a vertical slope. Both waveforms then follow the exact same curvature and end with the exact same voltage, i.e., - 50V. The only difference between the two waveforms is the starting voltage, i.e., the waveform of Figure 18 has a starting voltage of 170 V and the waveform of Figure 16 has a starting waveform of 220 V.

Because these starting waveforms correspond to the vertical (no slope) portion of the waveforms in both Figures 16 and 18, the starting voltages do not change in any way the slopes of the two waveforms applied in these figures. Accordingly, it is unreasonable to conclude that the waveforms applied in Figures 16 and 18 have different predetermined non-zero slopes as required by claim 1. Based on these differences and these differences alone, it is respectfully submitted that claim 1 and its dependent claims are allowable. AAPA also fails to teach or suggest these features.

But, this is not the only difference between claim 1 and the cited references. Claim 1 also recites that “the non-zero slope of the first [] waveform is greater than the predetermined non-zero slope of the second waveform.” These features are not taught or suggested by Kanazawa or AAPA, i.e., the waveforms in Kanazawa have the exact same vertical slope which changes with exactly the same curvature to - 50 V. One of these waveforms does not have a non-zero slope greater than the non-zero slope of the other waveform as required by claim 1.

Based on these differences, it is respectfully submitted that claim 1 is allowable over a Kanazawa-AAPA combination. Withdrawal of the § 103 rejection and furtherance of claim 1 and its dependent claims to allowance is respectfully requested.

Claim 3 was rejected under 35 USC § 103(a) for being obvious in view of a Kanazawa-AAPA-Masumoto combination. Applicants traverse this rejection on grounds that the Matsumoto patent does not teach or suggest the features of claim 1 missing from AAPA and Kanazawa.

New claims 33-37 have been added to the application.

Claim 33 defines the types of waveforms applied during the first and second time intervals of the set-up periods and the effect these waveforms have on the formation of wall charges relative to the electrodes of a corresponding display cell.

Specifically, claim 33 recites that “each of the first waveform, which is applied to the sustain electrode during the first time interval that is a portion of the set-up interval included in the initial sub-field of said one frame, and the second waveform, which is applied to the sustain electrode during the second time interval that is a portion of the set-up interval of all or fewer than all of the remaining sub-fields following the initial sub-field, prevents a discharge between the scan electrode and the sustain electrode during respective ones of the first and second time intervals.” (See, for example, column 28, lines 22-28, of the specification for support). These features are not taught or suggested by the cited references.

The Kanazawa patent does not teach or suggest these features. In fact, Kanazawa teaches away from these features when it discloses that the waveforms applied during the write periods (i.e., the interval between t3 to t4) of the reset periods shown in Figures 16 and 18 causes a discharge to occur between scan (X) and sustain (Y) electrodes. (See column 9, lines 40-44, and column 11, lines 35-50). AAPA also fails to teach or suggest the features of claim 33.

Applicants submit that claim 33 is allowable, not only by virtue of its dependency from claim 1 but also based on the features separately recited therein.

Claim 34 recites that the second waveform applied to the sustain electrode has a predetermined positive non-zero slope different from a positive non-zero slope of the first electrically floated waveform, that the positive non-zero slope of the first electrically floated waveform is greater than the predetermined positive non-zero slope of the second waveform. (See, for example, Figure 10 of the application drawings for support). The Kanazawa patent does not teach or suggest these features, whether taken alone or in combination with AAPA. As shown in Figures 16 and 18, both waveforms of Kanazawa have descending and therefore negative slopes.

Applicants submit that claim 34 is allowable, not only by virtue of its dependency from claim 1 but also based on the features separately recited therein.

Claim 35 recites that “the set-up interval is for forming wall charges between the scan electrode and an address electrode within one or more cells by a writing discharge, and the set-down interval is for erasing a portion of said wall charges by an erasure discharge.” (See, for example, pages 15 and 16 of the specification for support). These features are not taught or suggested by the cited references whether taken alone or in combination, i.e., the waveforms applied in Kanazawa generate a discharge between X and Y (scan and sustain) electrodes, which does not appear to involve an address electrode discharge. Based on these differences, it is respectfully submitted that claim 35 is allowable.

Claim 36 recites that “the first waveform reaches said maximum peak voltage after the first waveform has changed along said corresponding predetermined non-zero slope, and wherein the second waveform reaches said maximum peak voltage after the second waveform has changed along said corresponding predetermined non-zero slope.” (See, for example, Figure 10 of the application drawings for support). These features are not taught or suggested by AAPA and the Kanazawa

patent, i.e., because the waveforms applied during the write period of the reset period of Kanazawa are descending waveforms, their maximum peak voltages occur before their curved portions, which are the only portions of the Kanazawa waveforms that have a slope. Thus, Kanazawa teaches away from the features of claim 36. Based on these differences, it is respectfully submitted that claim 36 is allowable.

Claim 37 recites that “the first and second waveforms have positive non-zero slopes that are substantially linear.” (See, for example, Figure 10 for support). These features are not taught or suggested by the cited references, whether taken alone or in combination, i.e., the curved portions of the waveforms in Kanazawa follow an arcing pattern, not a substantially linear pattern as recited in claim 37. The differences in these slopes/arcs effects the speed or rate at which wall charges are formed, with the curved waveforms of Kanazawa producing a much quicker and non-uniform wall charge distribution. In contrast, the wall charge distribution induced by the waveforms of claim 37 are far more uniform, which translates into improved performance.

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Withdrawal of the rejections in the Final Office Action and furtherance of the application to allowance is respectfully requested.

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Reply to Office Action of Dec. 22, 2008

Docket No. YHK-0131

To the extent necessary, a petition for an extension of time under 37 CFR § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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